

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-29 (Canceled).

1           30. (Previously Presented) A method for floating at least one substance for  
2 growing a tissue part in a bioreactor, the method comprising:

3                 providing at least one substance consisting of one of a tissue part, a scaffold  
4 having cells deposited thereon, and a scaffold including a tissue part thereon; and

5                 acting upon said substance with fluid, wherein the fluid holds the substance in  
6 free flotation;

7                 wherein the fluid flows in a direction counter to gravity when a density of said  
8 substance is greater than a density of the fluid, and in a direction counter to buoyancy when a  
9 density of said substance is less than a density of the fluid.

1           31. (Previously Presented) A method in accordance with claim 30, wherein  
2 the fluid has an increasingly lower flow speed in the direction counter to gravitation.

1           32. (Previously Presented) A method in accordance with claim 30, wherein  
2 the substance is acted upon with at least one fluid jet.

1           33. (Previously Presented) A method in accordance with claim 30, wherein a  
2 position of the substance in the bioreactor is measured by a sensor, and wherein a speed of the  
3 fluid in the bioreactor is regulated to hold the substance in flotation.

1           34. (Previously Presented) A method in accordance with claim 30, wherein  
2 the fluid flows downward in the direction of gravitation, and wherein a gaseous fluid is led into  
3 the downward flowing fluid.

1               35. (Previously Presented) A method in accordance with claim 34, wherein a  
2 flow of the gaseous fluid is slowed down by a flow of the downward flowing fluid.

1               36. (Presently Amended) A bioreactor for growing a tissue part comprising:  
2                   a container comprising a first flow chamber;

3                   at least one substance consisting of one of a tissue part, a scaffold having cells  
4 deposited thereon, and a scaffold including a tissue part thereon, wherein the substance is acted  
5 upon with fluid; and

6                   an apparatus for conveying the fluid, wherein the substance is arranged in the first  
7 flow chamber in such a manner that the fluid holds the substance in free flotation.

1               37. (Previously Presented) A bioreactor in accordance with claim 36 further  
2 comprising;

3                   a sensor; and

4                   a regulation apparatus,

5                   wherein the fluid conveying apparatus is connected to the first flow chamber, and  
6 wherein the regulation apparatus is connected to the fluid conveying apparatus and to the sensor  
7 in such a manner that the position of the substance may be measured and regulated.

1               38. (Previously Presented) A bioreactor in accordance with claim 36, wherein  
2 the first flow chamber widens upwardly.

1               39. (Previously Presented) A bioreactor in accordance with claim 38, wherein  
2 the container has a section of the wall, wherein said section widens upwardly and forms the first  
3 flow chamber.

1               40. (Previously Presented) A bioreactor in accordance with claim 36, wherein  
2 at least one fluid line opens into the first flow chamber.

1           41. (Previously Presented) A bioreactor in accordance with claim 36 further  
2 comprising at least one fluid guiding means arranged in the container, wherein the fluid guiding  
3 means forms the first flow chamber, and wherein the first flow chamber widens upwardly.

1           42. (Previously Presented) A bioreactor in accordance with claim 41, wherein  
2 the fluid guiding means is a hollow body.

1           43. (Previously Presented) A bioreactor in accordance with claim 42, wherein  
2 the hollow body has an inner space, and wherein said inner space widens upwardly and forms the  
3 first flow chamber.

1           44. (Previously Presented) A bioreactor in accordance with claim 42, wherein  
2 the container comprises a wall, wherein the hollow body has an upwardly reducing outer  
3 contour, and wherein the hollow body is arranged in the container in such a manner that the first  
4 flow chamber is formed between said outer contour and the container wall.

1           45. (Previously Presented) A bioreactor in accordance with claim 42, wherein  
2 the hollow body is formed in the shape of a truncated circular cone.

1           46. (Previously Presented) A bioreactor in accordance with claim 36, wherein  
2 the container has at least one closeable opening.

1           47. (Previously Presented) A bioreactor in accordance with claim 46, wherein  
2 the closeable opening has a surface of at least one fourth of a cross-sectional area of the  
3 container.

1           48. (Previously Presented) A bioreactor in accordance with claim 46, wherein  
2 the closeable opening is arranged above the first flow chamber.

1           49. (Previously Presented) A bioreactor in accordance with claim 36, wherein  
2 the fluid conveying apparatus is outside the container, and wherein the fluid conveying apparatus  
3 is connected to the container.

1 50. (Previously Presented) A bioreactor in accordance with claim 36, wherein  
2 the fluid conveying apparatus comprises a fluid conveying means arranged inside the container.

1                   51. (Previously Presented) A bioreactor in accordance with claim 50, wherein  
2 the fluid conveying apparatus comprises an electric motor having a static motor part arranged  
3 outside the container and a rotatable motor part arranged inside the container, and wherein the  
4 fluid conveying means is connected to the rotatable motor part.

1                       52. (Previously Presented) A bioreactor in accordance with claim 51, wherein  
2       the electric motor is a canned motor, and wherein the rotatable motor part is rotated without a  
3       through-going shaft.

1                       53. (Previously Presented) A bioreactor in accordance with claim 51, wherein  
2 the fluid conveying apparatus comprises a magnetic coupling drive adapted for coupling to the  
3 rotatable motor part.

1                       54. (Previously Presented) A bioreactor in accordance with claim 51, wherein  
2 the rotatable motor part is journalled at least with respect to one degree of freedom with  
3 magnetically acting means.

1. 55. (Previously Presented) A bioreactor in accordance with claim 54, wherein  
2. the rotatable motor part is completely magnetically journalled.

1                       56. (Previously Presented) A bioreactor in accordance with claim 50, wherein  
2 the fluid conveying means is a vaned wheel.

1                   57. (Previously Presented) A method for floating a substance for growing a  
2 tissue part in a bioreactor, the method comprising:

3 providing at least one substance consisting of at least one of a tissue part, a  
4 scaffold having cells deposited thereon, and a scaffold including one or more tissue parts  
5 thereon; and

6                   acting upon said substance with fluid, wherein the fluid holds the substance in  
7 free flotation;

8                   wherein the fluid flows in a direction counter to gravity when a density of said  
9 substance is greater than a density of the fluid, and in a direction counter to buoyancy when a  
10 density of said substance is less than a density of the fluid.

1                 58. (Previously Presented) A method in accordance with claim 34, wherein  
2 the gaseous fluid is oxygen.

1                 59. (Previously Presented) A method in accordance with claim 34, wherein  
2 the gaseous fluid is air.

1                 60. (Previously Presented) A method in accordance with claim 57, wherein  
2 the substance is acted upon with at least one fluid jet.

1                 61. (Previously Presented) A method in accordance with claim 57, wherein a  
2 position of the substance in the bioreactor are measured by a sensor, and wherein a speed of the  
3 fluid in the bioreactor is regulated to hold the substance in floatation.

1                 62. (Previously Presented) A method in accordance with claim 57, wherein  
2 the fluid flows downward in the direction of gravity, and wherein a gaseous fluid is led into the  
3 downward flowing fluid.

1                 63. (Previously Presented) A method in accordance with claim 62, wherein a  
2 flow of gaseous fluid is slowed down by a flow of the downward flowing fluid.

1                 64. (Previously Presented) A method in accordance with claim 57, wherein  
2 the fluid has an increasingly lower speed in the direction counter to gravity.

1                 65. (Previously Presented) A bioreactor in accordance with claim 36 further  
2 comprising a second flow chamber arranged above the first flow chamber, wherein the second

3 flow chamber is formed in such a manner that fluid flowing from top to bottom therein has a  
4 lower speed with decreasing height.

1                 66. (Previously Presented) A bioreactor in accordance with claim 65, wherein  
2 the first and the second flow chambers form a common inner space which has an inlet opening  
3 for the fluid at the top and at the bottom and which has an outlet opening between the top and  
4 bottom inlet opening.

1                 67. (Previously Presented) A bioreactor in accordance with claim 65, wherein  
2 the fluid conveying means is a pump that is connected to the top and bottom inlet opening and to  
3 the outlet opening in such a manner that the quantity of fluid flowing into the top and bottom  
4 inlet opening may be controlled.

1                 68. (Previously Presented) A bioreactor in accordance with claim 40 wherein  
2 the at least one fluid line is arranged such that it opens into the first flow chamber from below  
3 with respect to the first flow chamber.

1                 69. (Previously Presented) A bioreactor in accordance with claim 40 wherein  
2 the at least one fluid line is arranged such that it opens into the first flow chamber laterally with  
3 respect to the first flow chamber.

1                 70. (Previously Presented) A bioreactor comprising a container for a  
2 substance, the bioreactor comprising:

3                 a first flow chamber to which a flowing fluid may be supplied, with the first flow  
4 chamber being designed such that the fluid flowing upwardly therein has a lower speed with  
5 increasing height; and

6                 a second flow chamber arranged above the first flow chamber, the second flow  
7 chamber being designed such that fluid flowing from top to bottom within the second flow  
8 chamber has a smaller speed with decreasing height;

9                 wherein the first flow chamber and the second flow chamber form a common  
10 inner space that has a first inlet opening for the fluid at a top of the common inner space and a  
11 second inlet opening for the fluid at a bottom of the common space; and

12               wherein the common inner space has an outlet opening between the first and  
13   second inlet openings.